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Safety awareness for responders:

QA and Inspector Safety & Health Awareness Training

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Objectives of this training - At the end of this short session, you should be able to:

1. Describe some of the hazards that you may face in the field
2. Explain how to protect yourself from these hazards

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Injuries Could Result From

- Vehicle Accidents
- Struck by
- Falls
- Contusions
- Lacerations
- Burns
- Animal bites

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Emergency in the Field

- For minor injuries or concerns go to:
  - Local hospitals or clinics
  - First Aid or Nurse station
- In serious Emergency call 911
  - Know your exact location
- Notify your supervisor/IC before you leave the worksite

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Steps to Safer Driving

- Plan your trip
- Know your vehicle
- Keep gas tank at least ½ full
- Maintain control
- Remember defensive driving techniques

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QA and Inspector Work Areas

- Building Entry
  - Pre-entry
  - Entry
  - Post-entry
- Field Areas
  - Debris Site Towers
  - Debris pick up sites

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Hazard: Property Entry

- Watch Were You Step
- Don’t Assume Heavy Equipment Operator Can See You
- Assume All Dogs Are Vicious
- Report Any Intimidation From Anyone

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Work Zones

- Does The Site Have Adequate parking?
- Don’t Park Too Close To Equipment
- Don’t Leave Valuables In An Unlocked Car
- Watch Out For Nails And Other Debris

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Building Entry

- Physical Safety
  - Building collapse
  - Debris
  - Floodwater exposure
  - Damaged floors
  - Confined space
  - Threatening/violent occupant
- Use standard Sampling protocols
  - Oxygen levels
  - Lower Explosive limit
  - Toxics
  - Lead, Asbestos, Silica
  - Biologicals (mold)

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Building Entry Inspection Equipment

One 4-gas meter with probe and pump. The four gases capable of being detected shall be set to alarm at:

- Oxygen (%) < 19.5 %
- Lower Explosive Limit (%) (LEL) 5 % LEL *
- Hydrogen Sulfide(H2S) (PPM) 10 ppm H2S
- Carbon Monoxide (CO)(PPM). 35 ppm CO

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Physical Hazards Debris

- **Sharp, Jagged Debris**
  - Take care when handling debris that can cause wounds
  - Tetanus is a health threat when you have a wound injury
  - Use appropriate gloves and double glove as necessary
  - Wear long pants, long sleeve shirts
  - Seek immediate medical attention for all cuts or wounds

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Building Entry

- Atmospheric Hazards
  - Mold
  - Explosive gases
  - Carbon monoxide
  - Hydrogen sulfide
  - Dust
  - Asbestos/Lead

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Building Entry

- Electrical Safety
  - Exposed electrical wiring, outlets, switches
  - Downed power lines
- Only trained electricians and utility works should approach and handle electrical power lines

Power cord in water

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Building Entry

- Ergonomics
  - Lifting and carrying debris
    - Utilize safe lifting techniques
    - Use two people to move heavy items
  - Strains/strains

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Building Entry

- Bloodborne Pathogens
  - There is no direct risk from being near human remains
  - Direct contact with human remains could cause hepatitis and/or HIV
  - Medical waste, syringes, etc
  - DO NOT CONTACT OR REMOVE REMAINS.

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Personal Protective Equipment

- Wear steel toe/shank non-slip footwear
- Use durable gloves when handling Debris
- Hearing Protection for noisy environments
- Reflective Safety Vest
- Hard Hat

When in doubt, contact your supervisor!

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Personal Protective Equipment

- High Visibility Apparel
- Personal, Government Issued IDs
  - IDs should be displayed
- Nitrile rubber gloves
- Leather gloves
- Safety Goggles
- Rubber Boots/Steel toes/Shanks
- Hard Hat
- N95 Protective Masks
- 4-Gas meter

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Personal Protective Equipment To Prevent Exposure

- Steel Toe Boots vrs Low Cut Shoes
- Coveralls/Tyvek Suits
- Rain Gear
- Fall Protection
- Hearing Protection
- Reflective Vests
- Hipwaders
- Snake Chaps-walking sticks for snakes

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Hazard: Eye Injuries

- Use safety glasses with side shields as a minimum.
  - An eye wear retainer strap is suggested.
- Consider safety goggles for protection from fine dust particles or for use over regular prescription eye glasses.
- Use only protective eyewear that has an ANSI Z87 mark on the lenses or frames, including sun glasses

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Hazard: Flying debris/material handling

- Wear personal protective equipment, including hard hats, safety shoes, eye glasses, and work gloves, reflective vests
- Do not walk under or through areas where heavy equipment is being used to lift objects

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Hazard: Debris piles/unstable work surfaces

- Don't walk on surfaces you aren't sure are stable.
- Use clear paths to get to work surfaces, avoid walking over debris
- Wear protective equipment provided, including safety shoes with slip resistant soles

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Hazard: Falls from QA Towers

- Erect tower on firm, level surface
- Use the hand rails when ascending & descending stairs
- DO NOT lean on rails/walls while in the tower

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Hazard: Traffic around QA Towers

- Watch for trucks and debris overhang as vehicles approach the tower
- Work Zone Safety
  - Ensure that cones, signs and warning barricades are properly placed

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Hazard: Traffic around QA Towers

No Barricade or buffer cones to keep trucks away from tower

Improved Work Zone

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Hazard: Heavy equipment

- Be alert to the activities around you.
- Do not exceed the load capacity of cranes and other lifting equipment.
- Do not walk under or through areas where cranes and other heavy equipment are lifting objects.
- Do not climb onto or ride loads being lifted or moved.
- Listen for Back-up Alarms
- Pedestrians must be visible to heavy equipment operators at all times

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Chippers-Grinders

- Loud noise
  - Use hearing Protection
- Flying Debris
  - Stay back 300 feet
- Moving Parts
  - Do not reach into a machine
  - Do not use machine unless trained and authorized

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Debris Trucks

- Overhead power lines
- Traffic
- Congested – bottle neck area
- Worker on top of potentially unstable load
- Modified trailer used to haul oversized load debris –
- No traffic control (direction)
- Tip-Over

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Heavy Equipment

- Bobcats
- Loaders
- Backhoes
- Trucks

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Hazard: Noise

- Wear hearing protection in noisy work environments
  - Examples: earth-moving equipment, pneumatic tools
  - Most debris pile operations are above 85 dBa, the threshold for wearing hearing protection

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Hazard: Inhalation of dust containing asbestos, silica and other toxins

- Tasks Creating Exposure
  - QA Debris Truck Inspection
  - Trucks/equipment movement creates dust clouds
  - Dumping
- Protection
  - Appropriate Respiratory Protection
  - Water trucks and roads for dust suppression

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Hazard: Heat Related Illness

Heat Stress	Heat Exhaustion	Heat Stroke
Headache	Headache	Headache
Thirst	Dizziness	Dizziness
Profuse sweating	Confusion	Restlessness
Muscle aches	Nausea	Confusion
	Sweating-pale, clammy skin	Hot, flushed dry skin
	Cramps, legs & abdomen	Body temp <104F
	Rapid, weakening pulse & breathing	Unresponsive/disoriented

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Hazard: Sunburn

- Prevent overexposing skin and eyes to sunlight and wind
- Use sunscreen and lip balm
  - Minimum SPF 15
- Use protective eyewear
  - ANSI Approved Z-87 stamped on the frame
- Limit exposure

No Barricade or buffer cones to keep trucks away from tower

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Hazard: Carbon monoxide inhalation

Symptoms: Headache, dizziness, drowsiness, or nausea; progressing to vomiting, loss of consciousness, and collapse, coma or death under prolonged or high exposures.

Areas affected from gasoline- or propane-powered generators or heavy machinery:

- **Vicinity of operating e**
- **Vicinity of generators**
- **Fire Pits**
- **Debris Reduction Site**
- **Burning & Compacting**

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Carbon Monoxide Monitors

Some Examples of CO Alarms:

- Fixed Monitors can be found in many retail stores
- Portable Monitors are available from a variety of Safety Equipment vendors

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Hazard: Chemicals Issues for QA

Debris Sites may Have:

- Industrial/Commercial Chemicals.
- Household Chemicals
- Unknowns

Report any suspected chemical exposure to your supervisor immediately.

  - Sudden loss of smell or bag taste are indicators of exposure

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Hazard:Potential chemical exposures

Symptoms: Eye, nose, throat, upper respiratory tract, and skin irritation; flu like symptoms; central nervous system depression, fatigue, loss of coordination, memory difficulties, sleeplessness, mental confusion. Chronic effects depend on the extent and the duration of exposure

Jobs Affected

- Debris Removal
- Site Clean-up

Protection

Hazard specific as identified by supervisor or safety officer.

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Chemicals Issues

Field Sites may Have:

- Industrial/Commercial Chemicals.
- Household Chemicals
- Unknowns

Report any suspected chemical exposure to your supervisor immediately.

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Potential chemical exposures

Symptoms: Eye, nose, throat, upper respiratory tract, and skin irritation; flu like symptoms; central
nervous system depression, fatigue, loss of coordination, memory difficulties, sleeplessness, mental confusion. Chronic effects depend on the extent and the duration of exposure.

Protection

Hazard specific as identified by supervisor or safety officer.

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Hazard: Animals and insects

- **To protect yourself from mosquitoes:**
  - Use screens on dwellings.
  - Wear long pants, socks, and long-sleeved shirts.
  - Use insect repellents that contain DEET or Picaridin.
- **Beware of wild or stray animals:**
  - Avoid wild or stray animals. Call local authorities to handle animals.
  - Get rid of dead animals according to local guidelines.
  - Wear and clean proper protective clothing when handling carcasses.
- **Fire Ants**

Hazard: Poisonous Plants

at the beach

Poison Ivy

- Train workers on hazardous plant recognition
- Use gloves and wear long pants and long-sleeved shirts when possibility of contacting poisonous plants

it climbs

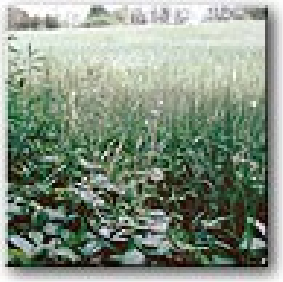
it creeps

summer

spring

fall

it's a bush



where it grows

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Protect yourself

- Walking over and handling debris that is unstable can cause cuts, scrapes, bruises, sprains, etc.
- Avoid contact with stagnant wat
  - Wash and sanitize immediately if exposed
- Use durable gloves when handli Debris

When in doubt, contact your supervisor!

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Miscellaneous Items

- Duct Tape
- Flashlight
- Water/Soap/Brush
- Antibacterial Hand Sanitizer
- SOP signed-off and available
- Plastic trash bags
- Bottled water
- First Aid Kit

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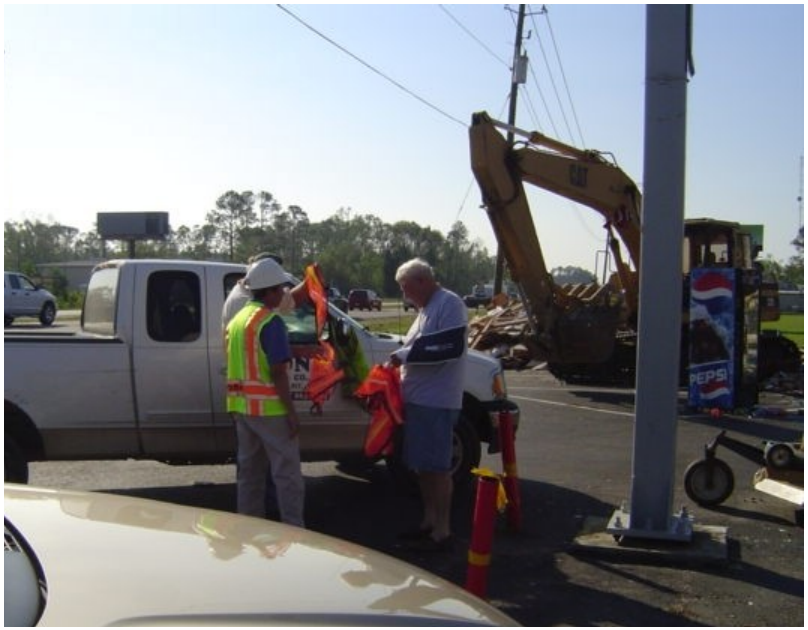
Buddy System

- Communications
- Visual/Verbal
- Move in teams



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Control Measures and Safety Practices

- Work In Teams
- Have Appropriate Vaccinations
- Keep Distance From Power Lines
- Park In Safe Areas With Warning Lights Or Flashers On

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Summary

- The hazards and issues are dynamic and require vigilance and flexibility.
- The key to a safe response is attention to the safety issues of your work environment.
  - The physical hazards are similar to any construction or demolition site.
  - The health hazards include the hazards associated with the environment

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Additional information

- This training program is based on recommendations from FEMA, NIEHS, NIOSH, OSHA, CDC and the U.S. Army Corp of Engineers.
  - You can find a link to their fact sheets and other important information at the National Clearinghouse for Worker Safety and Health Training www.wetp.org .